

REVISION OF *FEVILLEA* (CUCURBITACEAE: ZANONIEAE)

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ABSTRACT

A revision of the neotropical genus *Fevillea* with keys, descriptions, and distribution is provided. Two subgenera are recognized: subgenus *Fevillea* with six species and subgenus *Anisosperma* with one species. *Fevillea bahiensis* G. Robinson & Wunderlin from Brazil is described as new and subgenus *Anisosperma* (Silva Manso) G. Robinson & Wunderlin is proposed.

RESUMEN

Se aporta una revisión del género neotropical *Fevillea* con claves, descripciones, y distribución. Se reconocen dos subgéneros: subgénero *Fevillea* con seis especies y subgénero *Anisosperma* con una especie. Se describe como nueva *Fevillea bahiensis* G. Robinson & Wunderlin de Brasil y se propone el subgénero *Anisosperma* (Silva Manso) G. Robinson & Wunderlin.

Fevillea (Cucurbitaceae: Zanonieae), a neotropical genus of seven species, is characterized by leaves with glands, calyx with glandular squamellae (except *F. passiflora*), petals with a medial adaxial flap-like appendage or ridge, staminate flowers with five bilocular anthers, and a globose, usually indehiscent, large-seeded fruit.

TAXONOMIC HISTORY

Fevillea was established by Linnaeus (1753) in honor of Louis Éconches Feuillée, (1660–1732), a French clergyman, explorer, astronomer, and botanist. Linnaeus recognized two species, *F. trilobata* and *F. cordifolia*.

Adanson (1763) published the pre-Linnaean name *Nhandiroba*, of Marcgrave (Piso & Marcgrave 1648), but placed Linnaeus's name *Fevillea* in synonymy, thereby making *Nhandiroba* illegitimate. No species were listed. The name *Nhandiroba* remained unused until resurrected by Kuntze (1891–1898).

The first comprehensive treatment of *Fevillea* since Linnaeus (1753) was that of Seringe (1828) who recognized four species. In addition to *F. cordifolia* and *F. trilobata*, Seringe recognized *F. punctata* (L.) Poir. [= *Trichosanthes* sp.] and *F. javilla* Kunth [= *F. cordifolia*].

Silva Manso (1836) established the monotypic *Hypanthera* with *H. guapeva* [= *Fevillea trilobata*] and *Anisosperma* with *A. passiflora* (Vell.) Silva Manso [= *Fevillea passiflora* Vell.]. Both monotypic genera were accepted by most subsequent workers until recently.

Roemer (1846) recognized *Hypanthera* and *Fevillea*. He placed ten species in *Fevillea*, incorporating some taxa now placed in *Trichosanthes* L., *Pteropepon* Cogn., and *Sicydium* Schlttdl. *Fevillea passiflora* was also recognized, but without reference to Silva Manso's placement of the species in *Anisosperma*. Roemer erected two sections: section *Fevillea* with nine species and section *Javilla* with only *F. javilla* Kunth [= *F. cordifolia* L.].

Cogniaux (1878) recognized three species of *Fevillea* for Brazil: *F. trilobata*, *F. albiflora* Cogn., and *F. deltoidea* Cogn. (the latter now in *Pteropepon*). In addition, he recognized the monotypic genus *Anisosperma* and expanded the generic limits of the previously Old World genus *Alsomitra* (Blume) M. Roem. to include two new neotropical species: *A. brasiliensis* [= *Siolmatra brasiliensis* (Cogn.) Baill.] and *A. pedatifolia* [= *Fevillea pedatifolia* (Cogn.) C. Jeffrey]. In a more comprehensive treatment, Cogniaux (1881) expanded *Fevillea* to six species, maintaining *Anisosperma* and *Alsomitra*.

The genus *Siolmatra*, a segregate of *Alsomitra* created by Baillon (1885) to accommodate *Alsomitra brasiliensis* Cogn. [= *Siolmatra brasiliensis* (Cogn.) Baill.], was accepted by Cogniaux (1893) who described a second species (*S. paraguayensis*). Three additional species were later added by Cogniaux (1916), one new (*S. amazonica*) and two transferred from *Alsomitra* (*S. pedatifolia* (Cogn.) Cogn. and *S. peruviana* (Huber) Cogn.). Harms (1926) added a sixth species (*S. pentaphylla*), later (Harms 1933) a seventh (*S. simplicifolia*), and Standley (1937) an eighth (*S. mexiae*). Jeffrey (1962b), noting the incongruent mixture of taxa in *Siolmatra*, recircumscribed the genus and transferred four species to *Fevillea*. In reviewing the New World taxa of the Cucurbitaceae, Jeffrey (1978) listed nine species in *Fevillea*, including *F. passiflora*, considering *Anisosperma* congeneric with *Fevillea*.

FLORAL AND FRUIT MORPHOLOGY

The staminate inflorescence consists of numerous, small, pentamerous flowers that are paniculate in subgenus *Fevillea* or fasciculate to subumbelliform in subgenus *Anisosperma*.

In subgenus *Fevillea*, the midrib of the adaxial surface of the sepals is fused with the lower margins of the petals. At or above this point of fusion extends a small glandular protuberance of uncertain ontogenic origin which is here referred to as a "glandular calycine squamella." The exudate from the squamellae is clear and remains visible on most herbarium specimens. Each petal has a median, adaxial, uncinately appendage or slightly raised glandular midrib which is adnate with the base of the stamen filament. In subgenus *Anisosperma*, the sepals and petals are united at their base and lack squamellae. Instead, the petals have a median, adaxial, glandular ridge.

An articulation occurs between the filiform hypanthium and the pedicel. The indumentum on the staminate flowers is quite variable in most species and

is similar (when present) on both the hypanthium and pedicel. However, *F. trilobata* has a stipitate-glandular pubescence on the hypanthium above the articulation in rather sharp contrast to the non-glandular trichomes on the pedicel below.

The presence of five free, bilocular anthers in *Fevillea* is unique for the family and is considered plesiomorphic. The general trend within the Cucurbitaceae is the reduction of stamen number from five to three or to two and the reduction in locule number from two to one.

The pistillate flowers are rarely collected and are thus imperfectly known or unknown for some species. We have seen them in only four of the seven species. Those of *F. pergamentacea* and *F. passiflora* are known to us only through the literature while those of *F. moorei* are unknown.

The petals of the pistillate flowers have a slightly raised median appendage extending from the base to the center, reminiscent of those of the staminate flowers. Two small glands occur at the base of the petal on either side of this median appendage. A large, subrotund, flattened, glandular protuberance extends from the base of the calyx lobe between each petal. These protuberances may represent staminodes. Cogniaux (1878, 1881, 1916) reported these structures, counting 20 small "glands" at the base of the petals. This probably included the sum total of glands, ridges, and protuberances.

The fruits of subgenus *Fevillea* are large, subglobose, mottled green or brown, and gourd-like. The size ranges from 8 to 16 cm in length and from 7 to 13 cm in diameter. An individual plant may produce as many as 50 to 100 fruits at a time (Gentry & Wettach 1986). The fleshy rind of the fruit is zonate above the middle with the hypanthium lip scar (ovary partly inferior). The fruits are typically indehiscent, but reportedly sometimes dehiscent along the hypanthium lip scar in *F. pedatifolia* (A. Gentry, pers. comm.). In contrast, the fruits of subgenus *Anisosperma* are ovoid or oblong, subtrigonus, short-apiculate at the apex, and not zonate above the middle (ovary fully inferior). The seeds (up to 15 per fruit) vary from 3 to 6 cm in diameter and weigh 3 to 9 g when dry. They are among the largest in the Cucurbitaceae and are comparable in size only to those of the paleotropical genera *Telfairia* (Cucurbitaceae: Joliffieae) and *Hodgsonia* (Cucurbitaceae: Trichosantheae). The seed coat consists of three layers. The innermost layer surrounding the cotyledon is spongy and aeriferous. This layer is enclosed in a thin, hard, woody layer. The outermost layer is thin, smooth, and of a corky texture which tends to obscure the margin of the woody layer below but usually does not persist.

DISTRIBUTION AND HABITAT

Fevillea cordifolia has the widest distribution, ranging from southern Mexico, east into the Caribbean to Puerto Rico, south through Central America and into South America to northern Argentina. Dieterle (1976) notes that it is cultivated

in some or all Central American countries and is found in most Central American markets, especially in Guatemala. Three species (*F. trilobata*, *F. bahiensis*, and *F. passiflora*) are endemic to eastern Brazil and *F. pedatifolia* and *F. pergamentacea* occur in Ecuador, Peru, and Bolivia, with *F. pedatifolia* extending into adjacent Amazonian Brazil. *Fevillea moorei* is known only from the type material cultivated in England and is probably from Guyana or Amazonian Brazil.

Fevillea typically occurs along river banks, along the edge of tropical primary or secondary forests, and along the edge of seasonally inundated riverine forests, occasionally climbing to heights of 35 m in forest canopy openings. It also is found in forest clearings and along roadsides. It occurs at elevations from near sea level to about 500 m, less commonly up to 1,700 meters.

Fruits and seeds of *Fevillea* are quite buoyant and thus apparently are well suited to dispersal in fresh water. Gentry and Wettach (1986) report that at least one species (*F. cordifolia* or *F. pedatifolia*) of Amazonian Peru occurs in seasonally inundated forests, a habitat in which water dispersal is prevalent. Seed drift materials of *Fevillea cordifolia* have been found within the Caribbean basin well outside the species natural range. Gunn and Dennis (1976), Morton (1981), and the senior author have identified seeds of *F. cordifolia* collected from beaches of southern Florida. Guppy (1917) reported materials found along beaches of the Turks Islands, Tobago, and Grenada. Guppy (1917) and Gunn and Dennis (1976) found that seeds of *F. cordifolia* germinated in fresh water while afloat after the disintegration of the fruit wall, but were generally rendered non-viable in salt water. Although *F. cordifolia* is sometimes listed as an estuarine plant, the seeds are probably not capable of over-sea transport for any distance. However, dispersal by seed drift via salt water can not be disregarded. Guppy (1917) estimated that 5% of the *Fevillea cordifolia* drift seeds reaching the Turks Islands were viable while Gunn and Dennis (1976) found 20% of the undamaged drift seeds on Florida beaches were viable. The high salinity of the beach is probably lethal, thus preventing colonization.

ECONOMIC IMPORTANCE

The high seed oil content of *Fevillea trilobata* was recognized centuries ago by indigenous Brazilians whose use of it was first documented by Marcgrave (Piso & Marcgrave 1648). *Fevillea cordifolia* is similarly well known in the ethnobotanical literature (cf. Gentry & Wettach 1986). It has been used as a purgative, reputed antidote for many kinds of poisoning, and as a treatment for numerous diseases. In Jamaica it is called "antidote cacoon" or "antidote vine" (Adams 1972; Gunn & Dennis 1976; Morton 1981). Lindley and Moore (1870) first reported the use of *Fevillea* seeds by Peruvians as candles. Gentry and Wettach (1986) report that "abiria" (*Fevillea pedatifolia*) is used as candles by the Campa Indians of the Pichis Valley of Peru.

Fevillea seeds may have potential as an edible or fuel oil source. Calculated

on a weight per fruit basis, the seed oil content of *Fevillea* is higher than that of any other dicotyledon (Gentry & Wettach 1986). Preliminary analysis of oils extracted from the seeds of two Peruvian species (*F. cordifolia* and *F. pedatifolia*) by Gentry and Wettach show the oil to be simple triglycerides, slightly heavier than those of refined cottonseed oil. All species were rich in the saturated low-weight fatty acids, palmitic (21-60%) and stearic (10-42%), and the unsaturated oleic (17-17%) and linoleic (6-7%). When compared with previous results from the Brazilian *F. trilobata* (Tulloch & Bergter 1979), Gentry and Wettach suggest that the Peruvian species with 60-70% low-weight, saturated fatty acids would be a good sources of fuel oil while the Brazilian species with 57% unsaturated fatty acids would be a good source of polyunsaturated edible oils. However, the relatively high concentration of high molecular weight fatty acids in *F. trilobata*, probably correlated with its purgative properties, may reduce its value as an edible oil. The high percent of stearic acid in *F. cordifolia* might also suggest its use in the candle industry where this chemical is used to harden waxes and in the rubber industry where used as an extender. Preliminary laboratory analysis of *F. cordifolia* at the University of South Florida gave highly variable results thought to be related to the different ages of the seeds tested, further complicating the use of *Fevillea* seeds as a potential commercial oil source (unpublished data). Although *Fevillea* as an oil source is documented in the literature, to date it remains a genus of little or no economic importance.

INFRAGENERIC RELATIONSHIPS

Jeffrey (1962a) recognized two genera within the subtribe *Fevilleinae*, *Fevillea* and *Anisosperma*. In our treatment, *Anisosperma* is reduced to a subgenus of *Fevillea*. Subgenus *Anisosperma* differs from subgenus *Fevillea* by the shape of the corolla lobes, the character of the median adaxial glandular ridge of the staminate petals, the congested staminate inflorescence, the lack of glandular calycine squamellae on the staminate flowers, and the fruit shape. However, with the presence of the foliar glands, the median adaxial glandular ridge on the petals, and overall similarity in fruit and seed morphology, the single species of subgenus *Anisosperma* is easily accommodated in *Fevillea*.

Within subgenus *Fevillea*, three species groups can be distinguished on the basis of foliar gland characters. The first group consists of *F. pergamentacea* and *F. pedatifolia* which have conspicuous petiolar glands and inconspicuous laminar glands. The others are characterized by having laminar glands only. Of these, *F. cordifolia* and *F. trilobata* have glands terminating the veins on the lamina and lack basal laminar glands while *F. moorei* and *F. bahiensis* both have basal laminar glands only.

SYSTEMATIC TREATMENT

Fevillea L., Sp. Pl. 1013. 1753. *Nhandiroba* Adan., Fam. Pl. 2:139. 1763, nom. illegit.

TYPE: *Fevillea trilobata* L. Lectotype designated by M.L. Green (in Sprague et al., Nom. Prop. Brit. Bot. 190, 1929). This lectotypification replaces the lectotype of *Fevillea cordifolia* L. of Britton and P. Wilson (Sci. Surv. Porto Rico 6:270, 1925) under Art. 10.5b of the St. Louis Code.

Anisosperma Silva Manso, Enum. Subst. Braz. 38, 1836. TYPE: *Anisosperma passiflora* (Vell.) Silva Manso [= *Fevillea passiflora* Vell.].

Hypanthera Silva Manso, Enum. Subst. Braz. 37, 1836. TYPE: *Hypanthera guapeva* Silva Manso [= *Fevillea trilobata* L.].

Diocious vines or lianas; stems sulcate; tendrils axillary, sulcate, distally 2-fid, coiling both above and below the bifurcation. Leaves alternate, petiolate, the blade unlobed, or palmately 3- to 7-lobed, or 3- to 5-foliolate, with glands on the leaf margins terminating the primary lateral veins and/or 2 glands at the blade base or on the petiole, the petiole canaliculate, sometimes bearing 2 glands at or above the middle. Staminate inflorescences paniculate or subumbelliform, many-flowered, bracteate; flowers short-pedicellate; hypanthium pediceloid; calyx lobes 5, fused to the petals above, not completely enclosing the petals in bud, with a glandular calycine squamella on each calyx lobe at or near the point of fusion with the petals (except in *F. passiflora*); petals 5, fused to the sepals below, the lobes each with a median, adaxial, uncinata, flap-like appendage or a slightly raised ridge or (in *F. passiflora*) with a thick, glandular ridge; stamens 5, equal, free, inserted near the center of the flower, the anthers bilocular, extrorse, dehiscent longitudinally, the connective with an adaxial glandular protuberance or projection; pollen prolate, 18–22 μ in length, tricolporate, coarsely striate. Pistillate flowers solitary or in pairs; hypanthium deeply cupular; sepals and petals as in the staminate flowers or sometimes the petals differing in shape; ovary partly inferior, 3-locular, the styles 3, free, outwardly curved, the stigmas reniform, capitate, the ovules pendulous, usually 4 in each locule. Fruit globose, gourd-like with a thick, fleshy rind, zonate above the middle with the hypanthium lip scar or non-zonate, indehiscent or rarely circumscissile dehiscent along the hypanthium lip scar; seeds large, orbicular, somewhat compressed, the seed coat consisting of a thick, spongy, aeriferous inner layer surrounded by a thin woody layer, and an outer, usually non-persistent layer, the lateral surface smooth or striate-verrucose, the outer edges smooth or tuberculate, the inner kernel disk-like, oily.

Two subgenera are distinguished as follows:

1. Corolla lobes of the staminate flowers suborbicular, the base cuneate, with a median adaxial uncinata appendage or sharply defined ridge; glandular calycine squamellae present between the petals and the calyx lobes; staminate flowers in spreading panicles; fruit subglobose, zonate above the middle, the apex rounded _____ subg. **Fevillea**
1. Corolla lobes of staminate flowers oblong-hastate, the base with a median adaxial glandular ridge broadening downward; glandular calycine squamellae absent; staminate flowers in congested panicles or subumbelliform; fruit ovoid to oblong, not zonate, the apex short-apiculate _____ subg. **Anisosperma**

Fevillea subgenus **Fevillea**

Fevillea section *Javilla* M. Roem., Fam. Nat. Syn. Monogr. 2:116. 1946. TYPE: *Fevillea javilla* Kunth [= *Fevillea cordifolia* L.].

Staminate inflorescences paniculate; glandular calycine squamellae present; corolla lobes suborbicular with a median adaxial uncinately appendage or slightly raised ridge. Fruit subglobose, zonate above the middle, the apex rounded.

1. Leaves pedately 3- to 5-foliolate _____ **F. pedatifolia**
1. Leaves lobed or unlobed, but not pedately foliolate.
 2. Leaf blade without glands at the base or on the petiole, with marginal glands terminating the veins.
 3. Leaf blade with angled or rarely with rounded lobes, the marginal glands inconspicuous; staminate flowers with the hypanthium densely stipitate-glandular pubescent, the pedicel with non-glandular trichomes _____ **F. trilobata**
 3. Leaf blade unlobed or occasionally with rounded lobes, the marginal glands conspicuous; staminate flowers with the hypanthium and pedicel variously pubescent but not as above _____ **F. cordifolia**
 2. Leaf blade with glands at the base or on the petiole, with or without marginal glands terminating the leaf veins.
 4. Leaves with glands only at the blade base, without marginal glands terminating the leaf veins of the blade.
 5. Staminate flowers 3-5 mm wide; leaves drying reddish-brown, the blade with a conspicuous uncinately-ciliate margin _____ **F. bahiensis**
 5. Staminate flowers 15-20 mm wide; leaves drying green, the blade with a smooth margin _____ **F. moorei**
 4. Leaves with glands either at the blade base or on the petiole, also with marginal glands terminating the veins of the blade.
 6. Leaves with glands at the blade base _____ **F. pergamentacea**
 6. Leaves with glands on the petiole _____ **F. pedatifolia**

Fevillea bahiensis G. Robinson & Wunderlin, sp. nov. (Fig. 1). TYPE: BRAZIL, BAHIA: 8 km to the N of Ubaitaba on BR 101, 16 Jun 1972, *dos Santos* 2307 (HOLOTYPE: CEPEC; ISOTYPE: K).

Species haec a *Fevillea moorei* Hook. f. differt floribus staminatis minoribus, foliis in siccitate badiis usque atrobrunneis marginibus uncinato-ciliatis.

Vine or liana; stem glabrous to lightly appressed golden brown-pubescent; tendrils glabrous to lightly pubescent. Leaves unlobed, the blade ovate, (2.5-)6.5-10.5(12) cm long, (3.5-)5.5-9 cm wide, membranaceous, drying dark brown to reddish brown, 5-nerved, the apex acuminate, the base cordate to truncate, the margin entire, with two irregularly shaped glands at the base near the petiole, the upper and lower surfaces glabrous or with scattered, appressed, golden brown trichomes, these usually denser along the leaf veins, the margin uncinately-ciliate, the petiole (1.5-)3.5-5 cm long, glabrous to lightly pubescent. Staminate flowers in a paniculate inflorescence on reduced subterminal, lateral branches, the branches subtended by a reduced leaf; pedicel 1.5-2 mm long, glabrous or sparsely pubescent; bracts linear, ca. 1 mm long; hypanthium 1.5-2 mm long, lightly golden brown-pubescent; calyx shallowly cupular, the lobes

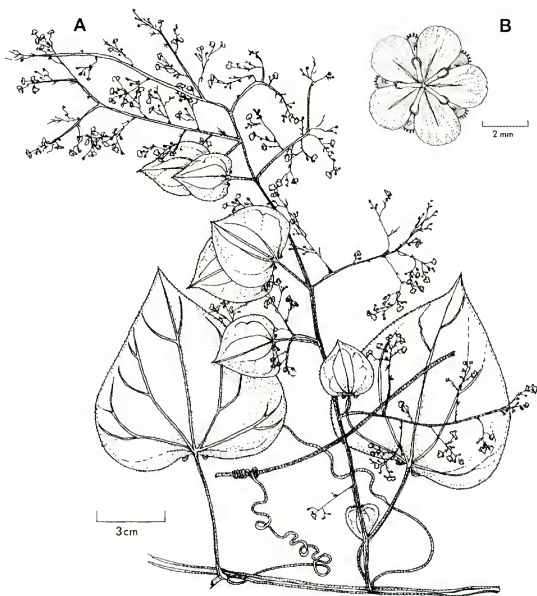


FIG. 1. *Fevillea bahiensis*. A. Habit, staminate inflorescence (dos Santos 2307). B. Staminate flower (dos Santos 2307).

up to 1.5 mm long, 1 mm wide, glabrous to sparsely pubescent abaxially, the margin entire, the apex rounded, with scattered stipitate glands, with a glandular calycine squamella at or near the point of fusion with the petals; petals suborbicular, 2.5–3 mm long, ca. 1.5 mm wide, cream-colored, the margin entire, the median adaxial ridge slightly raised; stamens 1–1.5 cm long, the anthers ca. 0.25 mm long, slightly longer than wide, the filaments ca. 0.5 mm long. Pistillate flowers solitary; calyx deeply cupular, the lobes ca. 1.5 mm long, ca. 1 mm wide, dark brown, fleshy; petals strap-shaped, ca. 2 mm long, ca. 1.5 mm wide, cream-colored. Immature fruit subglobose, 2–4 cm long and wide, the surface smooth; mature fruit not seen.

Distribution and ecology.—Endemic to Brazil in southern Bahia.

Additional specimens examined. **BRAZIL. Bahia:** Nova Esperança, São Lourenço, 32 km W of Wenceslau Guimarães, 26 Jul 2001, *Mattos-Silva et al.* 4479 (NY); Ramal da Torre da Embratel, entrance 15 km from the Ubaitabe/Itacaré Road (BR 654), 5.8 km from the entrance, 6 Jun 1978, *Mori & dos Santos* 10135 (CEPEC, K, NY); km 3, Uruçuca-Taboquinha highway, 19 Jun 1972, *dos Santos* 2316 (CEPEC); access road to Torre da Embratel, entrance to the right of road to Ubaitabe/Itacaré (BR 654), 24 Sep 1977, *dos Santos* 3130 (CEPEC, K); Almadina Mata da Serra Pancadinho, 10 Mar 1971, *Pinheiro* 1076 (CEPEC, K).

Fevillea bahiensis is most similar and probably most closely related to *Fevillea moorei* of Guyana Amazonian Brazil. Both species have glands only at the base of the leaf blade. *Fevillea bahiensis* differs by having smaller staminate flowers (petals 2.5–3 mm long vs. ca. 1 cm long in *F. moorei*) and the leaves drying a dark reddish brown and with conspicuous uncinete-ciliate margins.

***Fevillea cordifolia* L., Sp. Pl. 1013. 1753. (Fig. 2).** *Fevillea scandens* L., Sp. Pl. ed. 2. 1457. 1763, nom. illegit. *Nhandiroba scandens* Descoourt, Fl. Méd. Antilles, index 66 [t. 198]. 1829, nom. illegit. *Nhandiroba cordifolia* (L.) Kuntze, Revis. Gen. Pl. 1:257. 1891. *Fevillea cordifolia* L. var. *typica* Stehlé, M. Stehlé, & Quentin, Fl. Guadeloupe 2(3):133. 1949, nom. inadmiss. TYPE: "Habitat in America Calidior" (LECTOTYPE: "Nhandiroba," Plumier, Pl. Amer. 20, t. 27. 1703). Lectotypified by C. Jeffrey, (in C.E. Jarvis et al., eds. *Regnum Veg.* 127:47. 1993).

Fevillea hederacea Poir., in Lamarck, Encycl. 4:418. 1798. *Fevillea cordifolia* [var.] *hederacea* (Poir.) Cogn., in Alph. de Candolle & C. de Candolle, Monogr. Phan. 3:943. 1881. TYPE: "On la cultive au jardin des plantes. Elle est originaire de l'Amerique (vs.)" (HOLOTYPE P?, n.v.).

Fevillea javilla Kunth, in Humboldt, Bonpland, & Kunth, Nov. Gen. Sp. 2:124. 1817. TYPE: COLOMBIA. Bolivar: Turbaco, *Humboldt & Bonpland* 1403 (HOLOTYPE: P, n.v.; microfiche IDC 6209 39:III. 7).

Fevillea karstenii Cogn., in Alph. de Candolle & C. de Candolle, Monogr. Phan. 3:943. 1881. *Nhandiroba karstenii* (Cogn.) Kuntze, Revis. Gen. Pl. 1:257. 1891. TYPE: VENEZUELA. DISTRITO FEDERAL: Capaya, near Caracas, *Karsten* s.n. (HOLOTYPE: W, n.v.; photo ex W. F. MO). The type sheet contains a mixed collection of *F. cordifolia* and probably *Selysia prunifera* (Poepp. & Endl.) Cogn. The material of the latter in the lower left portion of the sheet is excluded.

Fevillea triloba Sessé & Mociño, Fl. Mexic. ed. 2. 231. 1894. TYPE: MEXICO. n.v.

Siolmatra mexiae Standl., in J.F. Macbride, Publ. Field Mus. Nat. Hist., Bot. Ser. 13(6):329. 1937. TYPE: PERU. LORETO: left bank of Río Marañón, above Rancho Indiana, 110 m, 22 Jan 1932, *Mexia* 6406 (HOLOTYPE: F; photo ex F. F.; ISOTYPES: BM, K, MO, NY, U, US).

Fevillea uncipectala Kuhlman, Arch. Jard. Bot. Rio de Janeiro 4:365. 1925. TYPE: BRAZIL. PARÁ: Rio Branco de Obidos, Castanhal Grande, 4 Nov 1919, *Ducke* s.n. (RB 15924) (HOLOTYPE: RB, n.v.; ISOTYPE: B, destroyed; photograph ex B. F. MO, NY, US).

Vine or liana; stem glabrous or lightly to densely pubescent or tomentose; tendrils glabrous to lightly glandular-pubescent. Leaves with the blade unlobed or occasionally 3- to 5-lobed, suborbicular to cordate, (4-)7.5–13(–18) cm long, (2.5-)5–12(–19) cm wide, membranaceous or coriaceous, 5-nerved, the apex acute, the base cordate to truncate or rarely rounded, the main lateral veins terminating in small irregularly shaped glands, the upper and lower surfaces glabrous to densely pubescent, the petiole (2-)3–7 cm long, glabrous or pubescent. Staminate flowers in a paniculate inflorescence on reduced subterminal, lateral branches, the branches subtended by a glandular bract 0.5–4 mm long;

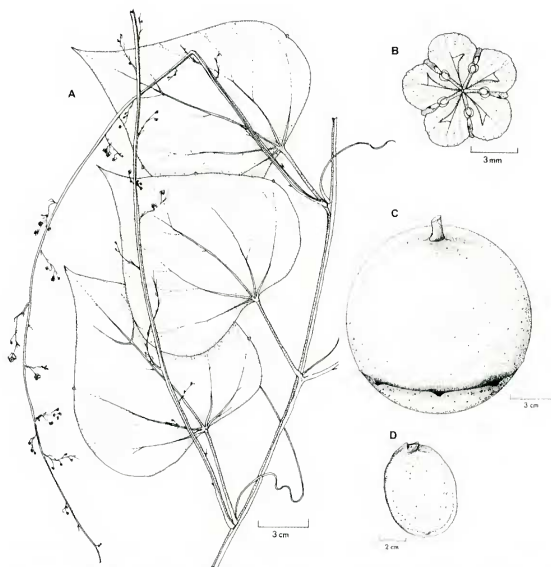


FIG. 2. *Fevillea cordifolia*. A. Habit, staminate inflorescence (Lent 3288). B. Staminate flower (Klug 3090). C. Fruit (Huashikat 1078). D. Seed (Huashikat 1078).

pedicel 2–4 mm long, glabrous to densely pubescent; bracts linear, glandular, ca. 0.5 mm long; hypanthium 3–4 mm long, glabrous to densely pubescent; calyx shallowly cupular, the lobes 1–2.5 mm long, 1–1.5 mm wide, obtuse or rounded, densely to sparsely glandular-pubescent, the margin entire, the apex rounded, with a small glandular calycine squamella protruding from each sepal at or near the point of fusion with the petal; petals suborbicular, 3.5–5 mm long, 2.5–4 mm wide, white, whitish green, cream-colored, light brown, pink or pinkish orange, dark red, or reddish purple, the margin undulate, the median, adaxial ridge with an uncinata appendage; stamens ca. 1 mm long, the anthers ca. 0.5 mm wide, slightly longer than wide, the filaments ca. 0.5 mm long. Pistillate flowers solitary or in pairs; calyx deeply cupular, the lobes suborbicular,

ca. 3 mm long and wide, pustulate, fleshy; petals oblong, ca. 5 mm long, ca. 3.5 mm wide, cream-colored, the median adaxial appendage slightly raised, with 2 small suborbicular glands on each side of the ridge at the base. Fruit subglobose, gourd-like, 10–12 cm in diameter, 10–16 cm long, the surface pustulate, mottled green, zonate above the middle with the hypanthium lip scar and marked at the apex by a raised triradiate line; seeds orbicular, compressed, 1–2.5 cm thick, 4–6(–7.5) cm wide, the lateral surface of the woody layer striate-verrucose or pustulate, with the outer edges smooth or occasionally tuberculate, the tubercles 2–3 mm long.

Distribution and ecology.—Southern Mexico east to Puerto Rico, south through Central America, and into South America to Bolivia. A canopy plant of wet forests from sea level to 1,700 meters.

Selected specimens examined. **MEXICO.** Guerrero: Acapulco, 1894–1895, *Palmer 335* (MO). **GUATEMALA.** Sacatepéquez: near Antigua, 1500–1600 m (cultivated, found in market), Nov 1938–Feb 1939, *Standley 63809* (F). **NICARAGUA.** Rio San Juan: 1 km E of the village of Sábalo, 11°02'N, 84°29'W, 50 m, 6 Sep 1985, *Moreno 26249* (MO); between Pueblo de San Juan del Norte Nuevo and La Casa de Ramón Castillo Viajando by San Juanillo, 10°55'N, 83°49'W, 0–100 m, 7 Jul 1994, *Rueda et al. 1839* (MO); Río Pigibaye, 18 Feb 1995, *Rueda et al. 3199* (MO); Reserva Indio-Maiz, along Río Indio, 11°06'N, 83°58'W, 5–20 m, 19 Sep 1998, *Rueda et al. 8822* (MO). **Rivas:** Isla Ometepe, Volcán Maderas, Hacienda "La Argentina," 11°27'–28'N, 83°31'W, 700–900 m, 15 Jun 1984, *Robleto 864* (MO); "Las Cuchillas," Isla Ometepe-Volcán Maderas, 11°27'N, 85°28'W, 400–800 m, 2 Jun 1985, *Robleto 1972* (MO). **Zelaya:** Caño Monte Cristo, "La Gruperá," 11°33'N, 87°48'W, ca. 10 m, 4 Feb 1982, *Moreno & Sandino 14743* (MO, NY). **COSTA RICA.** Heredia: Finca La Selva, OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí, 24 Mar 1980, *Hammel 8251* (MO). **Limón:** Tortuguero-Sierpe basin, near Río Sierpe and Río Penetencia, 10°32'40"N, 83°32'50"W, 20 m, 21 Jan 1997, *Hammel & Grayum 20720* (MO); Río Jiménez, 18 Mar 1973, *Lent 3288* (F, MO); Cordillera de Talamanca, Reserva Biológica Hitoy Cerere, road between Estación de la Reserva and Cerere, 9°40'20"N, 83°01'35"W, 100 m, 23 Feb 1989, *Herrera & Chacón 2434* (MO). **Puntarenas:** Península de Osa, Estación de Oro, along the Aqueduct, 08°42'00"N, 83°29'10"W, 150 m, 10 Feb 1996, *Angulo 517* (MO, NY); Península de Osa, La Palma, Guadalupe, Finca de Efraín González, 08°38'30"N, 83°28'00"W, 50 m, 17 Aug 1993, *Aguilar 2119* (MO); Península de Osa, Rancho Quemado, road to Draque, 08°42'00"N, 83°33'00"W, 100 m, 30 Jan 1991, *Nielsen 895* (MO); Valle de Coto Colorado, 08°46'00"N, 83°15'00"W, 100 m, 25 Jun 1993, *Quesada & Segura 705* (MO); Playa San Josecito, Península de Osa, 08°37'00"N, 83°44'00"W, 10–100 m, 10 Dec 1993, *Quesada et al. 848* (MO); Valle de Coto Colorado, shore of Río Esquinas, mouth of Río Esquinas, 08°44'00"N, 83°20'00"W, 30 m, 17 Dec 1993, *Segura et al. 255* (NY); Forest of Santo Domingo de Golfo Dulce, Mar 1896, *Tonduz 10078* (BR). **San Jose:** Cordillera de Talamanca, Las Nubes, Estación Santa Elena, 09°23'30"N, 83°36'30"W, 1150 m, 14 Feb 1996, *Alfaro 477* (MO). **PANAMA.** Chiriquí: Burica Peninsula, Rabo de Puerco, 8 km along road W from Puerto Armuelles, 150 m, 19 Feb 1973, *Bussey 440* (F, MO, NY, USA). **Colón:** Barro Colorado Island, 100 m S of Zetek Trail, 600 m, 26 Aug 1970, *Croat 11918* (F, MO, NY, USA). **Darién:** Río Sabana, above Sante Fe, 14 Sep 1967, *Duke 14107* (MO). **Los Santos:** 17.8 mi S of Macaracas, ca. 300 m, 25 May 1967, *Burch 1605* (MO). **Panamá:** 12.4 km E of Canita, 10 Oct 1975, *Witherspoon 8704* (MO). **CUBA.** Oriente: Bayate at Río Jagua, 4 May 1919, *Ekman 9613* (G, K, NY, US). **JAMAICA.** Portland: gorge of the Swift River at Eden, 0.5 mi N of Paradise, ca. 30 m, 19 Mar 1956, *Proctor 11871* (MO). **St. Andrew:** Hope Gardens, 29 May 1902, *Harris 8381* (BM, NY). **St. Ann:** cave near St. Ann's Bay, Dec 1873, *Purdie s.n.* (K). **St. Mary:** Wapping Stairs, N side of Guys Hill, 20 Mar 1960, *Proctor 20713* (NY). **St. Thomas:** near Dove Hall, 10 Feb 1850, *Alexander s.n.* (K, NY). **HAITI.** Massif du Nord, Le Borgne, edge of RiviPre du Borgne, 12 Sep 1925, *Ekman 4851* (US). **DOMINICAN REPUBLIC.**

El Seibo: Cordillera Oriental, ca. 6–8 km S of Miches-Las Lgunas de Nisibon Highway, on road to Batey Arroyo Santiago, basin of Río Yeguada (S of Miches), 18°55'N, 69°04'W, 80–100 m, 28 Jun 1990, *Zanoni & Jiménez 44609* (MO). **La Vega:** Jarabocoa, Monabao, Los Calabazos, Arroyo Frio entrance, 19°42'N, 70°43'34.6"W, ca. 774 m, 19 Mar 2001, *Ososki & Saborio 299* (NY). **PUERTO RICO:** Along road between Utuado and Adjuntas, km 40, 2 Feb 1997, *Accevedo & Angell 9419* (NY); Bayamón, 31 Mar 1885, *Sintenis 986* (BM, BR, G, K, M, NY, US). **COLOMBIA. Amazonas:** Loreto-Yacu River, ca. 100 m, Sep 1946, *Schultes & Black 83351* (K). **Antioquia:** near Río León ca. 20–30 km upstream and S of the river mouth ca. 15 km W of Chigorodó, ca. 7°45'N, 76°50'W, ca. 100 m, 14 Mar 1962, *Feddema 1907* (NY); Murri la Blanquita, Río Murri, 06°35'N, 76°50'W, 960 m, 28 Feb 1992, *Gentry et al. 75799* (MO); km 28.8, Nutibara-La Blanquita road, 06°40'N, 76°27'W, 1020 m, 5 Nov 1988, *Zarucchi et al. 7172* (MO). **Atlántico:** Barranquilla and vicinity, Jan 1934, *Elias 1173* (f, US). **Bolívar:** vicinity of Turbaeo, Nov 1920, *Heriberto 469* (f, US). **Chocó:** Río San Juan, Quebrada del Taparal, 5–20 m, 30 May 1946, *Cuatrecasas 21504* (f); Río Chintado, 1–2 1/2 hrs. above La Nueva, 6 Feb 1967, *Duke 9865* (NY); right bank of Río Baudó, ca. 18.5 km upstream of estuary, between estuary of Quebrada Porquera and the sawmill Porquera, ca. 5 m, 6 Feb 1967, *Fuchs & Zanella 21791* (NY). **Cundinamarca:** Sierra de Subía, 6.6 km N of Cumaca along road to Viota, 1700 m, 22 Jun 1972, *Barclay et al. 3521* (US). **Magdalena:** Santa Marta, 5 mi S of Ciénaga, near sea level, 12 Sep 1898–1899, *Smith 1607* (BM, BR, F, G, MO, NY, US). **Meta:** Serranía de la Macarena, Plaza Bonita, bank of Río Güejar, 400 m, 14 Nov 1949, *Philipson et al. 1423* (f, BM, US). **Putumayo:** Frontera Colombia-Ecuadoriana, along Río San Miguel, at mouth of the Río Cenejo, 300 m, 9 Dec 1940, *Cuatrecasas 10915* (US); San Antonio, Alto Campucana path, Finca La mariposa, 1350–1420 m, 01°12'N, 76°38'W, 10 Apr–1 May 1994, *Fernández et al. 10745* (NY). **Vaupés:** Río Guayabero, 240 m, 8 Nov 1939, *Cuatrecasas 7499* (US). **VENEZUELA. Apure:** Reserva Forestal San Camilo, vicinity of Chirocoa, 9–10 km E of Caserío San Camilo (El Nula), 200 m, 1 Apr 1968, *Steyermark et al. 101665* (MO, NY). **Aragua:** Parque Nacional Henri Pittier, Estación Biológica de Rancho Grande, 6 Jun 1987, *Rojas & Rojas 3617* (MO, NY); Parque Nacional Henry Pittier, between trail up Periquito and Fila de Periquito, along upper slopes of tributary to Quebrada Palo Vaco on side towards Lago Valencia, opposite Rancho Grande Biological Station, 1300–1400 m, 25 Oct 1961, *Steyermark 89886* (f, NY, US). **Carabobo:** Río Morón, E of Morón, 10°17'–18'N, 68°10'–16'W, 0–50 m, 20–21 Jul 1991, *Díaz & Jiménez 487* (MO). **Delta Amacuro:** between La Margarita and Puerta Miranda, Río Cure, 80–100 m, 26 Nov 1960, *Steyermark 87780* (NY, US); Río Acure, 29 Jan 1980, *Trujillo & Sulbaran 16234* (MO). **Distrito Federal:** Hacienda Chichiriviche, ca. 300 m, Jul 1958, *Aristeguieta 3225* (NY, US). **Mérida:** 0.5–2 km above dam site on Río Guatamaral, 7°45'N, 71°29'W, 15 Mar 1981, *Liesner & González 10637* (MO). **Miranda:** Carretera Santa Teresa-Guatopo, ca. 300 m, 4 Jun 1959, *Trujillo 4149* (US). **Yaracuy:** Sierra de Aroa, 2 Jul 1953, *Aristeguieta & Pannier 1854* (NY). **Zulia:** ca. 5 km SSE of Destacamento Guasare No. 1 (La Yolanda), 10°52'10"N, 72°29'30"W, 250–350 m, 16 Nov 1982, *Bunting et al. 12420* (NY); 8 km from San José de Los Altos on road to Cano Colorado, 390 m, 27 Nov 1977, *Jeffrey & Trujillo 2396* (f, K, MO); 6 km W of main road and 2 km S of Río Catatumbo, 09°6'N, 72°42'W, ca. 20–100 m, 29 Mar 1982, *Liesner & González 13347* (MO, NY). **ECUADOR. Morona Santiago:** El Centro Shuar Pampaxts, Río Kankaim (Cangaime), 02°47'S, 77°36'W, 300 m, 10 Sep 1985, *Warush RBAE85* (NY). **Napo:** 5 km SE of Las Sachas, 300 m, 13 Apr 1985, *Baker et al. 5995* (NY); Parroquia Dureno, indigenous Colán-Dureno community, 00°02'S, 76°42'W, 350 m, 29–31 Dec 1987, *Cerón & Cerón 3107* (MO, NY); Estación Biológica Jatun Sacha, Río Napo, 8 km E of Misahualli, 01°04'S, 77°36'W, 450 m, 22 Oct 1988, *Cerón & Iguado 5510* (MO); Hollin-Loreto-Coca highway, between Avila and Río Pucuno, 00°39'S, 77°22'W, 800 m, 10 Dec 1987, *Cerón et al. 2871* (MO, NY); Parque Nacional Yasuni, along Maxus road and pipeline construction project, km 54–54, 13–16 Sep 1993, *Dik 436* (MO, USF); km 2, new Cotundo-Coca highway, 1130 m, 5 Aug 1984, *Dodson et al. 15057* (MO); Coca-Auca oilfields road, km 53, 00°50'S, 76°52'W, 400 m, 20 Aug 1979, *Jaramillo & Coello 19710* (NY, US); Maxus road, km 1.8, 00°27'S, 76°38'W, 21 Sep 1997, *Klitgaard et al. 617* (NY); Parque Nacional Yasuni, Anangu, along Río Anangu near junction with Río Napo, 0°31'S, 76°23'W, ca. 270 m, 16 Jun 1982, *Lutcyn et al. 8498* (NY); near NW corner of Lake Limóncocha, Sep 1969, *Mowbray 69951* (MO); along Río Indillama, tributary of Río Napo,

Comuna Pompeya, 00°30'S, 76°40'W, 220 m, 5 Dec 1992, *Neill et al.* 10192 (MO, NY); right bank of Rio Napo, 8 km from Puerto Misahualli, 01°04'S, 77°37'W, 450 m, 7–16 Sep 1988, *Palacios* 3006 (MO, NY); Codo Sinclair, 00°08'S, 77°27'W, 650 m, 16–20 Sep 1990, *Palacios* 5719 (MO); Rio Huataraco, towards Ishpano, 00°44'S, 77°23'W, 700 m, 30 Nov 1992, *Palacios* 10510 (MO, USA); 6 km N of Shushufindi, towards Dureno, 0°10'S, 76°40'W, 450 m, 23 Sep 1985, *Palacios et al.* 829 (MO); Dureno on Rio Aguatico, 2 Jul 1966, *Pinkley* 103 (MO); Yusuni National Park, along Maxus road and pipeline construction project, km 21, 00°33'S, 76°31'W, 250 m, 24 Jul 1994, *Pitman* 646 (MO, USA); 20 km N of Coca, Palmoriente property, 00°20'S, 77°05'W, 250 m, 3–21 Nov 1989, *Rubio* 332 (MO, NY). **Pastaza:** ARCO oil well Villano 2, 01°25'S, 77°20'W, 400 m, 1–18 Dec 1991, *Hurtado* 2908 (MO); Petro-Cañada highway under construction, Via Auca, 115 km S of Coca, 5 km S of Rio Tiguino, 01°15'S, 76°55'W, 320 m, 1–6 Mar 1989, *Zak* 4135 (MO). **Pichincha:** Santo Domingo de los Colorados, 800 m, 10 Aug 1945, *Solis* 10928 (F); Carchi: Reserva Indígena Awá, Parroquia Tobar Donoso, sector El Baboso, 78°20'W, 00°53'N, 1600 m, 3 Oct 1991, *Rubio & Talcuz* 295 (MO, USA). **PERU. Amazonas:** S of Huampami across Rio Cenepa, 700–900 m, 27 Dec 1972, *Berlin* 716 (MO); Rio Santiago, Cantón de la Quebrada Caterpiza, 1 km from community of Caterpiza, 200 m, 11 Sep 1979, *Huashicat* 552 (MO, USA); Yamayakat Brosque, 04°55'S, 78°19'W, 320 m, 16 Jan 1996, *Jaramillo et al.* 881 (MO). **Huánuco:** vicinity of Tingo María Insuete, 670 m, 16 Aug 1961, *Schunke* 5645 (F, USA). **Loreto:** Flor de Yarina-Río Samiria, 20 Oct 1982, *Ayala et al.* 3922 (NY); Explorer's Inn, Rio Amazonas near Indiana, 03°30'S, 73°03'W, 130 m, 20 Feb 1988, *Gentry et al.* 61736 (MO); Santa Rosa, lower Rio Huallaga below Yurimaguas, ca. 135 m, 1–5 Sep 1929, *Killip & Smith* 28720 (NY); Balsapuerto, ca. 220 m, May 1933, *Klug* 3090 (BM, F, G, MO, NY, USA); Quebrada de Tamishaco above Tamishaco, 7 Nov 1978, *Rimachi* 4046 (MO); Florida, 8 Feb 1980, *Rimachi* 4856 (NY); Rio Itaya, highway to San Antonio, near Venezia, 90 m, 21 Sep 1994, *Rimachi* 11120 (NY); Bosque Nacional de Iparia, along the Rio Ucayali near Iparia (80 km at the confluence with Rio Pachitea), 250–300 m, 23 Aug 1968, *Schunke* 2670 (NY); San Antonio, Rio Itaya, 04°10'S, 73°20'W, 150 m, 13 Dec 1982, *Vásquez & Jaramillo* 3597 (MO); Cocha Pastor, Isla Padre, 03°45'S, 76°10'W, 116 m, 21 Dec 1982, *Vásquez et al.* 3683 (NY); Indiana, Exploración Inn, 03°30'S, 73°05'W, 108 m, 12 Apr 1992, *Vásquez et al.* 18213 (MO). **Madre de Dios:** Parque Nacional del Manu, Cocha Cashu Biological Station, 21 Aug 1976, *Foster & Augspurger* 3394 (K, MO, NY, USA); Cocha Cashu Camp, Parque Nacional de Manu, along Rio Manu, 380 m, 22 Oct 1979, *Gentry et al.* 27161 (NY); Cuzco Amazónico Lodge, 15 km NE of Puerto Maldonado, 12°35'S, 69°03'W, 200 m, 18 Jun 1990, *Núñez* 12192 (MO); Las Piedras, Cusco Amazónico, Rio Madre de Dios, 12°29'S, 69°03'W, 200 m, 13 Aug 1991, *Timaná* 1997 (MO). **San Martín:** Valley of San Martín, E of Tarapoto, Funde de San Isidro near Codo Creek, 1000 m, 15 Aug 1937, *Belshaw* 3230 (NY); Pongo de Cainarachi, Rio Cainarachi, tributary of Rio Huallaga, ca. 230 m, Sep–Oct 1932, *Klug* 2749 (BM, F, G, MO, NY, USA); Rioja-Pomacochas road, below Venceremos, ca. 20 km NW of Rioja, 05°45'S, 77°38'W, 1600 m, 8 Feb 1984, *Gentry & Smith* 45128 (MO); above Chazuta, W of Quebrada Chazuta, 06°34'S, 76°12'W, 200–300 m, 28 Aug 1986, *Knapp* 8177 (NY); W of Nueva Aspusana (2 hrs down Rio Huallaga from La Roca), 8 Aug 1962, *Mathias & Taylor* 6116 (MO); Fundo La Campiña, 2 km below Tocache Nuevo, right bank of Rio Huallaga, ca. 400 m, 23 Aug 1969, *Schunke* 3377 (NY); Tananta (left bank of Rio Huallaga), 6 Oct 1970, *Schunke* 4479 (NY); Nueva Unión below Puerto Huicte (right bank of Rio Huallaga), 450–500 m, 1 Aug 1974, *Schunke* 7965 (NY). **Ucayali:** Bosque Nacional de Iparia, along the Rio Ucayali near the village of Iparia (ca. 80 km above the confluence with Rio Pachitea), 200–300 m, 23 Aug 1968, *Schunke* 2670 (F, G); Rio Novia, right bank at native community San José, 10°12'S, 70°57'W, 189 m, 26 Feb 2002, *Schunke & Graham* 514909 (NY). **BRAZIL. Acre:** margin of Rio Azul, ca. 07°29'S, 73°39'W, 13 Oct 1986, *Campbell et al.* 8995 (NY); Sena Madureira, 28 Sep 1980, *Cid & Nelson* 2596 (NY); basin of Rio Jurua, right bank of Rio Tarauaca, 8°32'51"S, 71°28'39"W, 17 Nov 1995, *Daly et al.* 8562 (MO, NY); near mouth of Rio Macaú (tributary of Rio Iaco), 9°20'S, 69°W, 23 Aug 1933, *Krukoff* 5610 (BM, F, G, M, MO, USA). **Amazonas:** near mouth of Rio Embira (tributary of Rio Tarauaca), 7°30'S, 70°15'W, 6 Jul 1933, *Krukoff* 5209 (BM, F, G, M, MO, NY, USA). **Pará:** Belém, 20 Dec 1950, *Black* 50-10925 (NY); Rio Pacajá 2°50'S, 50°50'W, 15 Oct 1965, *Prance et al.* 1636 (NY); Rio Mocoões, 45 min. below Frances, 00°45'S, 49°41'W, 10 Nov 1987, *Prance et al.* 30399 (MO, NY); Altamira, left bank of lower

Rio Xingu, 19 Oct 1986, Souza *et al.* 385 (NY); Travessão do CNFC, between D13 and edge of Rio Xingu, 2 Dec 1986, Souza *et al.* 635 (NY); Ilha de Marajó, Cuantã, above Anajás, Rio Anajás, 00°57'S, 49–48°W, 2 Nov 1987, Tavares 334 (NY). **Rondônia:** E bank of Rio Madeira at Misericórdia between Cachoerias Misericórdia and Madeira, 30 Jul 1968, Prance *et al.* 6620 (NY). **BOLIVIA. Cochabamba:** Proyecto Valle del Saeta, km 240 on Santa Cruz-Villa Tunari highway, 17°00'S, 64°46'W, 290 m, 12–14 Jul 1989, Smith *et al.* 13711 (MO). **El Beni:** Rio Beni, above confluence with Rio Quiquibey, 3.5 hrs. upstream from Rurrenabaque, 14°44'S, 67°25'W, 320 m, 23 May 1990, Daly *et al.* 6590 (MO, NY). **La Paz:** Parque Nacional Madidi, 10.2 km NW of turnoff in Tumupasa, 200–500 m from summit, 14°09'57"S, 67°55'02"W, 830 m, 9 Aug 2000, Cioat *et al.* 84416 (MO). Santa Fe, NE of community, 13°40'S, 68°12'W, 250 m, 10 Aug 1995, DeWalt *et al.* 823 (MO, NY); basin of Rio Bopi, San Bartolomé near Calisaya, 750–900 m, 1–22 Jul 1939, Krukoff 10528 (F. G. K. MO, NY, US); Parque Nacional Madidi, near Arroyo Aguapolo and Rio Tuchi, 270 m, 16 Mar 2002, Macía *et al.* 6850 (NY). **Santa Cruz:** Parque Nacional Amboró, along Rio Isamá [“Rio Pitasmá”], 17°42–43'S, 63°37–38'W, 475 m, 11 Oct 1990, Nee 39252 (NY); Estancia San Rafael de Amboró, 15 km (by air) SSE of Buena Vista, 17°35'S, 63°37'W, 375 m, 28 Jul 1987, Nee *et al.* 35391 (NY); Rio Palometilla, 400 m, 16 Jun 1927, Steinbach 7904 (F. G. MO, NY, BM).

Fevillea cordifolia is a polymorphic species exhibiting considerable variation throughout its range. The species can be readily distinguished from other members of the genus by its conspicuous marginal laminar glands. It is most similar to *F. trilobata* of eastern Brazil and is distinguished from that species by the typically rounded leaf lobes (when lobes are present), rather than the angular lobes characteristic of *F. trilobata*. *Fevillea trilobata* also has a distinctive stipitate-glandular pubescence on the hypanthium of the staminate flowers, which is sharply differentiated from the uncinate pubescence of pedicel. This pattern of pubescence is lacking in *F. cordifolia*.

Fevillea moorei Hook. f., Bot. Mag. t. 6356. 1878. *Nhandinba moorei* (Hook. f.) Kuntze. Revis. Gen. Pl. 1:257. 1891. TYPE: GUYANA or BRAZIL. Cultivated at Liverpool Botanic Garden, 1871, Tyreman s.n. (HOLOTYPE K; ISOTYPE BR-fragment).

Vine or liana; stem glabrous; tendrils glabrous. Leaves with the blade unlobed, broadly ovate, 6–12 cm long, 3.5–7 cm wide, membranaceous, drying light green, 3-nerved, the apex acuminate, the base rounded, with 2 small, irregularly shaped glands near the petiole, the upper and lower surfaces glabrous, the petiole 1–2.5 cm long, glabrous. Staminate flowers in a racemose inflorescence ca. 6 cm long, (10–12 cm fide Hooker f.); pedicel 1–4 mm long, glabrous; hypanthium 5–6 mm long, glabrous; bracts linear, ca. 0.5 mm long; calyx shallowly cupular, the lobes oblong, ca. 6 mm long, 4 mm wide, the apex obtuse, the margin entire, with a glandular calycine squamella protruding at or near the point of fusion with the petals; petals suborbicular, somewhat broader at the apex, ca. 1 cm long, 1 cm wide, pale brick-red, the margin undulate; stamens ca. 4 mm long, the anthers ca. 1 mm long, slightly longer than wide, the filament ca. 3 mm long. Pistillate flowers and fruit not seen.

Distribution and ecology.—Known only from the type material received by J.D. Hooker from David Moore, curator of the Glasnevin Botanic Garden, Dublin, Ireland, who received it from Mr. Tyreman of the Liverpool Botanic Garden.

The material was labeled as "*Strychnos curari*" and said to have come from Gambia. As suggested by Hooker in the protologue, it is probable that the plant is from South America, possibly Guyana or the Amazon River basin of Brazil where *Strychnos toxifera*, the source of the drug curare is native and was known to occur at that time. Hooker named the plant in honor of his friend, Dr. Moore.

Fevillea moorei is most similar to *F. bahiensis* of southern Bahia, Brazil. It is easily distinguished by its larger staminate flowers, its leaf margins lacking uncinat trichomes, and its 3-nerved leaves which dry to a light green color.

Fevillea pedatifolia (Cogn.) C. Jeffrey, Kew Bull. 16:199 1962. (**Fig. 3**). *Alsomitra pedatifolia* Cogn., in Martius, Fl. Bras. 6(4):116. 1878. *Stolmatra pedatifolia* (Cogn.) Cogn., in Engler, Pflanzenr. 4(Heft 66):30. 1916. TYPE: BRAZIL. AMAZONAS: Rio Solimões, 1819-1820, Martius s.n. (HOLOTYPE: M; photo ex M. F. MO. NY, US; ISOTYPES: BR-fragment).

Alsomitra peruviana Huber, Bol. Mus. Paraense Hist. Nat. 4:616. 1908. *Stolmatra peruviana* (Huber) Cogn., in Engler, Pflanzenr. 4(Heft 66):30. 1916. *Fevillea peruviana* (Huber) C. Jeffrey, Kew Bull. 16:200. 1962. TYPE: PERU. UCAYALI: Rio Ucayali, near Canchahuaya, 28 Oct 1898, Huber 1390 (HOLOTYPE: MG, n.v.; photo ex MG: F; ISOTYPE: F-fragment).

Stolmatra amazonica Cogn., in Engler, Pflanzenr. 4(Heft 66):30. 1916. *Fevillea amazonica* (Cogn.) C. Jeffrey, Kew Bull. 16:199. 1962. TYPE: BRAZIL. AMAZONAS: Rio Juruá, Juruá Miry, Oct 1901, Ule 5819 (LECTOTYPE: here designated, K; ISOLECTOTYPES: F-fragment, MG, n.v.; photo ex MG: F; B, destroyed; photo ex B: F, MO, NY, US).

Stolmatra simplicifolia Harms, Notizbl. Bot. Gart. Berlin-Dahlem 11:769. 1933. *Fevillea simplicifolia* (Harms) C. Jeffrey, Kew Bull. 16:200. 1962. TYPE: PERU. LORETO: Lower Rio Huallaga, Yurimaguas, Puerto Arturo, 15 Nov 1929, Williams 5072 (HOLOTYPE: B, destroyed; LECTOTYPE: here designated, F; ISOLECTOTYPE: US).

Vine or liana; stem glabrous to densely glandular-pubescent; tendrils sparsely pubescent or glabrous. Leaves with the blade unlobed, or 3- to 5-lobed, or 3- to 5-foliolate, membranaceous to coriaceous, the unlobed or the lobed leaves ovate to ovate-oblong, (6-)8-15(-18) cm long, 9-14(-17.5) cm wide, 5- to 7-nerved, the divisions of the lobed leaves or the leaflets of the foliolate leaves (6-)8-15(-18) cm long, 4-8 cm wide, 1- to 2-nerved, with a petiolule up to 2 cm long, the apex of the blade or leaf divisions acuminate, the base of the blade or leaf divisions oblique or rounded, the margin entire or coarsely crenate-toothed, the primary lateral veins terminating in a small irregularly shaped marginal gland, the upper and lower surfaces glabrous or lightly pubescent, especially along the leaf veins, the petiole 3.5-5(-7) cm long, glabrous to sparsely pubescent, with 2 opposite, prominent, irregularly shaped median to subapical glands. Staminate flowers in a paniculate inflorescence on reduced lateral branches, each branch subtended by a thin scale-like glandular-pubescent bract 0.5-2 mm long; pedicel 0.5-1 mm long, sparsely glandular-pubescent to glabrate; hypanthium 0.5-1.5 mm long, sparsely glandular-pubescent to glabrate; calyx shallowly cupular, the lobes light green or greenish brown, suborbicular, 0.5-1 mm long and wide, the apex rounded or obtuse, glandular-pubescent or glabrous, the margin slightly erose and glandular-ciliate, with a glandular calycine squamella

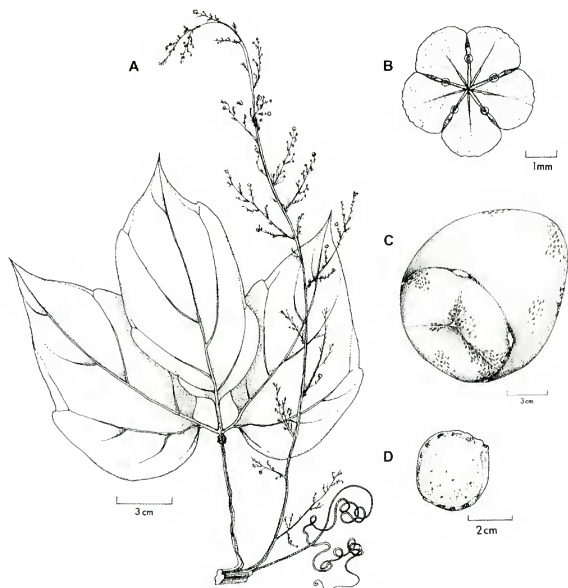


FIG. 3. *Fevillea pedatifolia*. A. Habit, staminate inflorescence (Klug 4187). B. Staminate flower (Klug 2678). C. Fruit (Barbour 5533). D. Seed (Barbour 5533).

protruding at or near the point of fusion with the petals; petals suborbicular, 1-2 mm long, 1-1.5 mm wide, white or greenish white, greenish yellow, or yellowish, the margin slightly crose, the median adaxial ridge slightly raised; stamens 0.25-0.5 mm long, the anthers ca. 0.25 mm long, slightly longer than wide, the filament ca. 0.5 mm long. Pistillate flowers in pairs; pedicel 1.2-2 mm long, calyx deeply cupular, the lobes ca. 3 mm long, ca. 2 mm wide, dark greenish brown, the surface pustulate; petals white. Fruit subglobose, ca. 14 cm long, 13 cm wide, gourd-like, indehiscent or rarely circumscissile dehiscent along the hypanthium lip scar (A. Gentry, pers. comm.), the surface smooth or pustulate, usually a mottled green color; seeds orbicular, compressed, 4-5 cm long and

wide, 1.5–2.5 cm thick, silver-white upon drying, the woody layer smooth to slightly pustulate, the winged margin ca. 0.5 cm wide.

Distribution and ecology.—Amazonian Ecuador and Peru, south to Bolivia, and east to Acre and Amazonas, Brazil. A plant of moist to wet forests, occurring at 130–800 meters in elevation.

Selected specimens examined. **ECUADOR.** **Napo:** Estación Biológica Jatun Sacha, 8 km E of Misahualli, 01°04'S, 77°36'W, 400 m 23–31 Jan 1989, *Cerón* 6076 (MO); km 2, new road from Cotundo to Coca, 1130 m, 5 Aug 1984, *Dodson et al.* 15072 (NY). **PERU.** **Amazonas:** 1 km from La Poza, W of Río Santiago, 180 m, 21 Aug 1979, *Huashikhat III* (MO); valley of Río Santiago, Quebrada Caterpiza, 2–3 km behind the community of Caterpiza, 3°50'S, 77°40'W, 200 m, 8 Feb 1980, *Tunqui* 783 (MO). **Ayachucho:** between Santa Rosa and Hacienda Luisiana, 640 m, 9 Sep 1976, *Wasshausen & Encarnación* 632 (NY). **Huánuco:** Codo de Puzuzo, floodplain of Río Puzuzo, S of settlement to main river, 9°40'S, 75°25'W, 450 m, 21 Oct 1982, *Foster* 9370 (USF). **Junín:** Río Negro, 800 m, 14 Aug 1960, *Woytkowski* 5795 (G, MO, US). **Loreto:** Yanamono, Explorama Tourist Camp on Río Amazonas between Indiana and mouth of Río Napo, 03°28'S, 72°48'W, 120 m, 26 Jul 1980, *Gentry et al.* 29043 (MO); Yanamono, Explorama Tourist Camp, Río Amazonas halfway between Indiana and mouth of Río Napo, 03°28'S, 72°50'W, 130 m, 13 Jul 1983, *Gentry et al.* 42937A (MO); Balsapuerto, 220 m, Feb 1933, *Klug* 2896 (BM, F, G, MO, NY, US); Indiana, Reserva Explorama (Yanamono), 03°30'S, 72°50'W, 90 m, 28 Sep 1990, *Pipoly et al.* 12592 (MO); Yanamono tourist camp, 50 mi. NE of Iquitos, 3°30'S, 72°50', ca. 106 m, 19 Oct 1980, *Vásquez & Jaramillo* 586 (NY); Indiana, Iquique, 03°30'S, 72°58'W, 115 m, 16 Dec 1987, *Vásquez & Jaramillo* 10164 (MO); Indiana, Explorama Reserve, 03°28'S, 72°50'W, 106 m, 9 Nov 1989, *Vásquez & Jaramillo* 13140 (MO). **Madre de Dios:** Tambopata, 12°50'S, 69°17'W, 260 m, 8 Nov 1988, *Alexiades et al.* 81 (MO, NY); Río Piedras, near confluence with Río Pariamanu, 12°40'S, 69°17'W, 260 m, 11 Jan 1991, *Alexiades et al.* 1071 (NY); Lago Tres Chimbas, ca. 65–70 river km SSW of Puerto Maldonado, ca. 10–15 air km NW effluence of Río La Torre (Río D'Orbigny) Río Tambopata, 12°49'S, 69°17'W, ca. 260 m, 7 Jun 1980, *Barbour* 5533 (MO); Río Manu, Cocha Cashu Biological Station, 350 m, 1 Oct 1980, *Foster* 5439 (NY); Cocha Cashu, vicinity of ox-bow lake of Río Manu, between Panaquia and Tayakome, 17–24 Aug 1974, *Foster et al.* 3492 (K, MO, US). Las Piedras, Cusco Amazónico, 12°29'S, 69°03'W, 200 m, 24 Jun 1991, *Timaná* 1844 (MO). **Pasco:** Río Pichis, 1 hr below Puerto Bermudez, between Puerto Bermudez and Paujil, 10°10'S, 74°50'W, 200 m, 17 Jun 1983, *Gentry et al.* 42148 (MO); Iscozacín, near confluence of Río Palcazu and Río Iscozacín, 10°12'S, 75°13'W, 430 m, 16 Jun 1982, *Smith* 1911 (NY); Palcazu Valley, Río Chuchurras drainage, 10°09'S, 75°20'W, 400 m, 13 May 1983, *Smith* 4009 (MO, US). **San Martín:** Pongo de Cainarachi, Río Cainarachi, tributary of Río Huallaga, 230 m, Sep–Oct 1932, *Klug* 2755 (BM, F, G, K, MO, NY, US); Quebrada Cachiyacu de Huaquisha, ca. 500–650 m, 7 Dec 1980, *Schunke* 12451 (NY). **Ucayali:** Bosque Nacional von Humboldt, Pucallpa–Tingo María Road, 8°40'S, 75°0'W, 250 m, 13 Feb 1981, *Gentry et al.* 31307 (MO, USF). **BRAZIL.** **Acre:** N bank of Río Jurua opposite Cruzeiro do Sul, 27 Oct 1966, *Prance et al.* 2936 (K, MO, NY, US). **Amazonas:** near Palmares, 11 Sep 26–Oct 1936, *Krukoff* 8475 (BM, BR, F, G, K, MO, NY, US). **BOLIVIA.** **La Paz:** basin of Río Bopi, Asunta (near Evenay), 690–750 m, 27–31 Jul 1939, *Krukoff* 10666 (F, G, K, MO, NY).

Plants with 3- to 7-foliate leaves are easily distinguished from other species of *Fevillea*. They previously had been considered a species of *Siolmatra* because of this feature, but the presence of the foliar glands, the bilocular anthers, and the large globose fruit with large unwinged seeds clearly separates it. *Siolmatra*, in contrast, lacks foliar glands, has unilocular anthers, and has a cylindrical fruit with winged seeds.

Fevillea peruviana and *F. amazonica* were separated from *F. pedatifolia* on the basis of leaflet number (3 rather than 5). *Fevillea amazonica* was further

separated on the basis of the petiolar gland position (median rather than sub-apical). These characters are not constant and thus *F. peruviana* and *F. amazonica* are here reduced to synonymy as suggested by Jeffrey (1962b).

Plants with unlobed leaves have been called *F. simplicifolia*. Since specimens with leaves intermediate between simple and 3-foliolate are occasionally found (although rare) and there are otherwise no other floral or vegetative differences, *F. simplicifolia* is here reduced to synonymy. Plants with unlobed leaves are sometimes confused with *F. pergamentacea*. However that species is readily distinguished by the presence of a pair of glands at the base of the blade, while the glands in *F. pedatifolia* are on the petiole.

Fevillea pergamentacea (Kuntze) Cogn., in Engler, Pflanzenr. 4(Heft 66):8. 1916. (Fig. 4). *Nhandinoba pergamentacea* Kuntze, Revis. Gen. Pl. 3(2):104. 1898. TYPE: BOLIVIA, SANTA CRUZ: Rio Yapacani, 400 m, Jun 1892, Kuntze *sn.* (LECTOTYPE: here designated, NY; ISOLECTOTYPES: NY, B, destroyed; photo ex B. F. MO, NY, US).

Nhandinoba harmsii Kuntze, Revis. Gen. Pl. 3(2):103. 1898. *Fevillea harmsii* (Kuntze) K. Schum., Just's Bot. Jahresber. 26:383. 1898. TYPE: BOLIVIA, SANTA CRUZ: Velasco, 200 m, Jul 1892, Kuntze *s.l.* (LECTOTYPE: here designated, NY; ISOLECTOTYPES: US, B, destroyed; photo ex B. F. MO, NY, US).

Vine or liana; stem glabrous to lightly pubescent; tendrils glabrous. Leaves with the blade unlobed or occasionally 2- to 3-lobed, ovate, 10-11(-15) cm long, (+) 6-8(-15) cm wide, subcoriaceous, drying very light brown or green, the apex or the lobe tips acuminate or acute to slightly rounded, the base cordate to truncate, the upper surface glabrous, the lower surface lightly pubescent along the veins, the margin entire, occasionally with scattered trichomes, the lateral veins occasionally terminating with a small gland, with 2 small, opposite, irregularly auriculate glands at the base of the blade, the petiole 2.5-4 cm long, glabrous to sparsely pubescent. Staminate flowers in a paniculate inflorescence on reduced lateral branches; pedicel 1-2 mm long, densely to sparsely pubescent; hypanthium 0.5-1 mm long, glabrous; calyx crateriform, the lobes lanceolate, 0.5-1 mm long, ca. 0.5 mm wide, obtuse, slightly erose-margined, sparsely to densely pubescent, with a prominent glandular calycine squamella protruding from each sepal at or near the point of fusion with the petals; petals narrowly obovate, 2-2.5 mm long, 1.5-2 mm wide, cream to yellowish brown, the margin entire, the median appendage slightly raised; stamens ca. 0.5 mm long, the anthers ca. 0.25 mm wide, slightly longer than wide. Pistillate flowers not seen. Fruit globose, 6-7 cm long and wide, green, the surface minutely pustulate; seeds orbicular, compressed, 1.5 cm thick, 3.5-4.5 cm long and wide, the lateral surface of the woody layer smooth to minutely pustulate, the marginal nerve ca. 0.5 cm wide, completely enclosing the seed.

Distribution and ecology.—Amazonian Colombia, Ecuador, eastern Peru, and central Bolivia. A plant of wet forests, occurring between 180 and 500 meters.

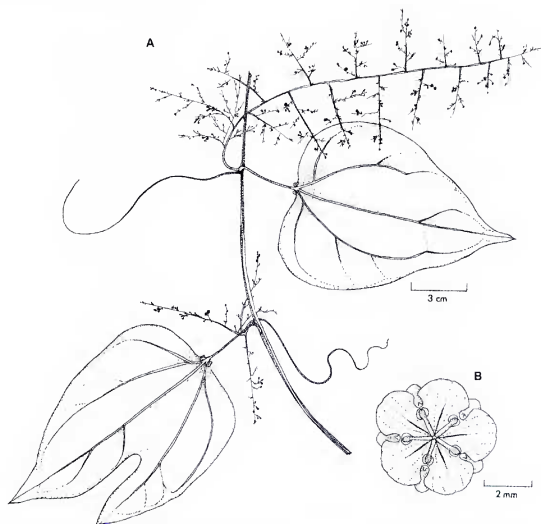


FIG. 4. *Fevillea pergamentacea*. **A.** Habit, staminate inflorescence (Klug 2198). **B.** Staminate flower (Klug 2198).

Additional specimens examined. **COLOMBIA.** **Guaviare:** Vereda Miraflores, 02°19'N, 72°26'W, 300 m, 27 Jan 1990, *Marulanda & Márquez 1766* (MO). **Putamayo:** Vereda "La Kofania," 1°1'N, 77°17'W, 500–700 m, 2 Sept 1993, *Cogollo et al. 6839* (MO). **ECUADOR.** **Napo:** Yasuní Forest Reserve, along road from PUCE Scientific Station to end of road towards Waoroni Territory, 00°40.901'S, 76°24.348'W, 240–310 m, 29 Jun 1995, *Acevedo & Cedeno 7571* (NY); Río Eno NE of Shushufindi, ca. 00°10'S, 76°40'W, 300 m, 11 Apr 1982, *Balslev 2321* (NY); Estación Biológica Jatun Sacha, 8 km E of Misahualli, 01°04'S, 77°36'W, 400 m, 23–31 Jan 1989, *Cerón 6076* (MO, NY); Estación Biológica Jatun Sacha, Río Napo, 8 km E of Misahualli, 01°04'S, 77°36'W, 400 m, 10 Aug 1989, *Cerón 7379* (MO, NY); Hollin-Loreto highway, between Avila and Loreto, Huiruno (Quichua community), 00°43'S, 77°19'W, 450 m, 29 Nov 1982, *Cerón 7853* (MO); km 2, new Cotundo-Coca highway, 1130 m, 5 Aug 1984, *Dodson et al. 15072* (MO, US); Pompeya, S of Río Napo, Río Jivino, Maxus highway, km 1–5, 00°25'S, 76°37'W, 220 m, 23–29 Nov 1992, *Grijalva et al. 231B* (MO); E of the mission in Ahuano on Río Napo, 550 m, 15 Feb 1973, *Humbles 6214* (F, MO); Yasuní National Park, Río Indillama, small southern tributary of Río Napo, Comuna Pompeya, 00°30'S, 76°40'W, 220 m, 26 Aug 1992, *Neill & Gudino 10120* (MO, NY); S of Volcán Sumaco, Hollin-Loreto highway, km 31, Comuna Challa Yacu, 00°43'S, 77°40'W, 1200 m, 20–25 Mar 1989, *Palacios 4102* (MO); Río Aguarico, Shushufindi, 244 m, 14 Feb 1975, *Vickers 116* (F). **PERU.** **Loreto:**

Florida, Rio Putamayo, at mouth of Rio Yubineto, 180 m, May-Jul 1931, Klug 2198 (BM, F, G, K, MO, NY, US). **BOLIVIA.** **Cochabamba:** Cochabamba, *Bang* 1264 (BM, K, MO). **El Beni:** Trinidad, 164 km towards Santa Cruz, 28 Aug 1985, *Beck* 12212 (NY). **Santa Cruz:** km 11, Rio Tres Quebradas road, 14 Aug 1991, *Acevedo et al.* 4598 (NY); border of Rio Pirai, along Montero-Portachuelo road, 1994, *Mostaccedo* 2288 (NY); 12 km SE of Comunidad Don Lorenzo, 0.5 km E of Estancia Caracore, W side of Rio Grande, 17°51'S, 62°47'W, 300 m, 17 Nov 1990, *Nee* 39986 (MO, NY); Parque Nacional Amboró, 0-2 km SW of El Carmen, along trail to Quebrada Yapoje and Rio Saguayo, 17°32'S, 63°42'W, 360 m, 15 Jun 1991, *Nee* 41079 (NY); Parque Nacional Amboró, 1-2 km NE of El Carmen on trail to crossing of Rio Surutu, 17°31'S, 63°41'W, 350 m, 21 Jul 1991, *Nee* 41796 (MO, NY); along Quebrada Salada and oil pipeline, first rocky foothills of the Andes, 4 km W of highway bridge over Rio Pirai, 18°06'S, 63°30'W, 750 m, 11 Dec 1991, *Nee* 42017 (MO, NY); 2 km (by air) NW of center of Bermejo, around Laguna Volcán, 18°07'S, 63°39'W, 1125-1175 m, 24 Dec 1994, *Nee* 46129 (MO, NY); Parque Nacional Amboró, along Rio Verde, 1 km E of Campamento Mataracú, 17°33'S, 63°52'W, 375 m, 31 May 1998, *Nee & Bohs* 49540 (NY); 4 km (by air) NE of Bermejo, valley of "Refugios Los Volcanes," 18°06'35", 63°36'W, 1070-1150 m, 29 Jul 2003, *Nee* 52385 (NY); Estancia San Rafael de Amboró, 15 km SSE of Buena Vista, 17°35'S, 63°37'W, 375 m, 30 Jul 1987, *Nee & Saldias* 35454 (NY, USA); Parque Nacional Amboró, 0.5 km upstream from the last Andean foothills, 17°40'S, 63°43'30"W, 450 m, 20 Dec 1988, *Nee & Saldias* 37265 (NY); Rio Piray, 450 m, 19 Jul 1924, *Steinbach* 6259 (G, K); Parque Nacional Amboró, before Rio Saguayo, 5 km SW of El Carmen, ca. 17°33'S, 63°44'W, 400 m, 15-22 Nov 1991, *Vargas et al.* 1225 (MO, NY); Reserva de Vida Silvestre Rios Blanco y Negro, Rio Negro de Caimanes, ca. 4 km SE of Rio San Pablo, 14°45'07"S, 63°56'W, 250 m, 18 Jun 1993, *Vargas* 2605 (MO, NY); Reserva de Vida Silvestre Rios Blanco y Negro, 5 km from meeting of Rios San Pablo and Negro de Caimanes, 14°48'05"S, 63°58'W, 200 m, 18-20 Jun 1993, *Vargas* 2623 (NY).

Fevillea pergamentacea is most similar to simple-leaved forms of *F. pedatifolia*, but differs in the position and form of its foliar glands and in the shape of the staminate flowers. *Fevillea pergamentacea* is characterized by flat, elongate-elliptic glands at the base of the leaf blade rather than petiolar glands well below the base of the leaf blade as in *F. pedatifolia*. *Fevillea pergamentacea* also has a distinctive crateriform staminate flower as opposed to the shallow cup-shaped flowers of *F. pedatifolia*. The distinction between *F. pergamentacea* and *F. harmsii* on the basis of the leaf shape cannot be maintained and *F. harmsii* is here reduced to synonymy as suggested by Jeffrey (1962b).

***Fevillea trilobata* L., Sp. Pl. 1014. 1753. (Fig. 5).** *Fevillea mangravii* Guib., Hist. Nat. Drog. Simpl. ed. 4. 3:244. 1850, nom. illegit. *Nhandiroba trilobata* (L.) Kuntze, Revis. Gen. Pl. 1:257. 1891. TYPE: BRAZIL. (LECTOTYPE: here designated, Marcgrave, in Piso & Marcgrave, Hist. Nat. Bras. 2:46, unnumbered pl. 1648).

Fevillea cordifolia Vell., Fl. Flumin., Icon. 10t. 102. 1831 ("1827"), non L., 1753. *Fevillea triangularis* M. Roem., Fam. Nat. Syn. Monogr. 2:114. 1846. TYPE: BRAZIL. RIO DE JANEIRO. (LECTOTYPE: here designated, Vellozo, Fl. Flumin., Icon. 10t. 102. 1831 ("1827")).

Hypanthera guapeva Silva Manso, Enum. Subst. Braz. 38. 1836. TYPE: BRAZIL. SÃO PAULO: São Ignácio (n.v.).

Fevillea tomentosa Gardner, London J. Bot. 2:355. 1843. *Fevillea trilobata* var. *tomentosa* (Gardner) Cogn., in Martius, Fl. Bras. 6(4):118. 1878. TYPE: BRAZIL. RIO DE JANEIRO: Serra dos Orgãos, s.d., Gardner 425 (HOLOTYPE, BM; ISOTYPES: G, K, photo ex G, F, MO, US).

Fevillea albiflora Cogn., in Martius, Fl. Bras. 6(4):118. 1878. *Nhandiroba albiflora* (Cogn.) Kuntze, Revis. Gen. Pl. 1:257. 1891. TYPE: BRAZIL. BAHIA: without precise locality, s.d., Blanchet 2380. (LECTOTYPE: here designated, G. ISOLECTOTYPES: BR, G, K, NY). SYNTYPE MATERIAL, BRAZIL.



FIG. 5. *Fevillea trilobata*. A. Habit, staminate inflorescence (Saint-Hilaire s.n. [Glaziou 8720]). B. Staminate flower (Saint-Hilaire s.n. [Glaziou 8720]).

MINAS GERAIS: near Contendas, 1818, *Martius 1581* (M); near Contendas, s.d., *Saint-Hilaire s.n.* (BR, F).

Fevillea albiflora var. *glaziovii* Cogn., Bull. Acad. Roy. Sci. Belgique, ser. 3, 14: 364, 1887. TYPE: BRAZIL, MINAS GERAIS: Serra do Inficionado, near Caracas, 6 Sep 1882, *Glaziov 13906* (LECTOTYPE: here designated, BR, ISOLECTOTYPES: B, destroyed, K, NY, photo ex B, F, MO, NY, US).

Fevillea trilobata var. *longipedicellata* Cogn., in Martius, Fl. Bras. 6(4):118, 1878. TYPE: BRAZIL, RIO DE JANEIRO: near Copacabana, s.d., *Riedel et Langsdorff*, fide Cogn. (1881) 706 (LECTOTYPE: here designated, BR, ISOLECTOTYPES: K, M). SYNTYPE MATERIAL: BRAZIL, RIO DE JANEIRO: Copacabana, Dec 1840, *Gardner 5469* (BM); Copacabana, *Lund 213* (n.v.); s.d., *Sello s.n.* (BM).

Fevillea trilobata var. *subintegrifolia* Cogn., in Martius, Fl. Bras. 6(4):118, 1878. TYPE: BRAZIL, RIO DE JANEIRO: Copacabana, s.d., *Luschnath 552* (LECTOTYPE: here designated, BR). SYNTYPE MATERIAL: BRAZIL, RIO DE JANEIRO: Copacabana, *Luschnath 950* (n.v.); *Blanchet 955* (n.v.).

Fevillea trilobata var. *subuniflora* Cogn., in Martius, Fl. Bras. 6(4):118. TYPE: BRAZIL, RIO DE JANEIRO: Gávea, *Glaziov 3986* (n.v.).

Vine or liana; stem densely pubescent, tomentose to lightly pubescent, or subglabrous; tendrils pubescent or glabrous. Leaves with the blade 3-lobed, or occasionally 5-lobed, 6–10 cm long, (2–)5–10(–15) cm wide, membranaceous, the apex acute or acuminate, the main lateral veins occasionally terminating in a small apical gland, the upper and lower surfaces densely to lightly pubescent. Staminate flowers in a paniculate inflorescence on reduced lateral branches; pedicel with uncinatate trichomes, 1–3(5) mm long; hypanthium (2–) 3–5 mm long, densely to sparsely stipitate-glandular pubescent; bracts glandular, linear, 0.5–1 mm long, densely to sparsely pubescent, the ones subtending the panicle branches, larger, less glandular, more leaf-like, often with a distinct stipe; calyx shallowly cupular, the lobes slender, ca. 2.5 mm long, ca. 1 mm wide, obtuse, densely to sparsely glandular-pubescent with a glandular calycine squamella protruding from each sepal at or near the point of fusion with the petals; petals suborbicular, 3–6 mm long, 1–4 mm wide, pale yellow, cream-colored or pink, each with a median adaxial uncinatate appendage; stamens ca. 1 mm long, the anthers ca. 0.5 mm long, slightly longer than wide. Pistillate flowers (fide Cogniaux 1878, 1881, 1916) 1–3; pedicel ca. 6 mm long, densely to sparsely pubescent; hypanthium ca. 2 mm long, densely to sparsely pubescent; calyx campanulate, the lobes with a glandular calycine squamella at the point of fusion between the sepals and the petals; petals strap-shaped, broadened at the base, cream-colored; styles 3; ovary 5–7 mm long. Fruit (fide Cogniaux 1878, 1881, 1916) subglobose, reddish brown, 7–9 cm wide, pubescent or lightly glandular-pubescent, the locules 4-seeded; seeds orbicular, compressed, ca. 4 cm long and wide, ca. 1 cm thick, the lateral surface of the woody layer striate-verrucose, the outer edge tuberculate.

Distribution and ecology.—Brazil from Ceará southwest to Minas Gerais and São Paulo.

Selected specimens examined **BRAZIL, Bahia:** Ilheus, 1836, *Blanchet 2380* (G, F, K, MO, NY, US); km 22 on Ilheus/Itabuna road (BR 415), near Palmoreto, 50 m, 1 Sep 1997, *Jardim et al. 1101* (NY). **Ceará:** Serra do Araripe, Sep 1828, *Gardner 1629* (BM, K). **Espirito Santo:** Reserva Florestal de Sooretama, 9

Aug 1965, *Belém 1499* (CEPEC, NY); Reserva Florestal da C.V.R.D., Linhares, Estrada Farinha Seca, Ant. 221, km 1100, 17 Jul 1986, *Folli 130* (NY); Reserva Florestal da C.V.R.D., Linhares, Estrada Farinha Seca, ant. 221, km 1100, 7 Aug 1990, *Folli 373* (NY); Reserva Florestal da C.V.R.D., Linhares, 28 Oct 1992, *Folli 1715* (NY). **Goias:** Formosa, 1814–1817, *Bowie & Cunningham 913* (BM). **Minas Gerais:** near Viçosa, 8 km from Fazenda de A. Cocerro toward São Miguel, 900 m, 26 Jun 1930, *Mexia 4798* (BM, F. G. MO, NY, US). **Paraíba:** Cidade Universitária, 6 km SE of Centro de João Pessoa, 7°57'S, 34°53'W, 30–45 m, 10 Aug 1990, *Agra 1165* (MO). **Paraná:** Barra do Turvo, 10 Oct 1973, *Hatschbach 32631* (K, MO, NY); Barra do Lageado Grande, 31 Aug 1978, *Hatschbach 41560* (NY); along road to landing of Porto Byington on bank of Rio Paraná, 200 m, 26 Jun 1966, *Lindeman & de Haas 1778* (NY); Parque Estadual Vila Rica do Espírito Santo, 18 Feb 1998, *Silva s.n.* (NY). **Pernambuco:** Tapera, border of Rio Tapacura, Oct 1933, *Pickel 524* (US). **Rio de Janeiro:** Gávea, s.d., *Glaziou 1344* (BR, US); Serra dos Orgãos, Alto Macabé, s.d., *Glaziou 17010* (NY). **São Paulo:** Campinas, 27 Aug 1938, *Krug 1593* (US).

Fevillea trilobata is most similar to *F. cordifolia* from which it can be distinguished by its usually angular (vs. rounded) leaf lobes and staminate flowers with stipitate-glandular trichomes on the hypanthium which are sharply differentiated from the uncinatate ones on the pedicel.

Fevillea subgenus **Anisosperma** (Silva Manso) G. Robinson & Wunderlin, comb. et stat. nov. **BASENOM:** *Anisosperma* Silva Manso, Enum. Subst. Braz. 38. 1836. **TYPE:** *Anisosperma passiflora* (Vell.) Silva Manso [= *Fevillea passiflora* Vell.].

Staminate inflorescences of congested panicles or subumbelliform; glandular calycine squamellae absent; corolla lobes oblong-hastate with a thick glandular adaxial ridge. Fruit ovate or oblong, subtrigonus, not zonate, the apex apiculate.

Fevillea passiflora Vell., Fl. Flumin., Icon. 10:t. 104. 1831 ("1827"). (**Fig. 6**). *Anisosperma passiflora* (Vell.) Silva Manso, Enum. Subst. Braz. 38. 1836. **TYPE:** BRAZIL. RIO DE JANEIRO: (LECTOTYPE: here designated, Vellozo, Fl. Flumin., Icon. 10:t. 104. 1831 ("1827")).

Vine or liana; stem glabrous or sparsely glandular-pubescent; tendrils glabrous. Leaves with the blade unlobed, ovate to broadly lanceolate, 5–13 cm long, 4.5–7.5 cm wide, membranaceous, with a distinct marginal nerve, the apex acute to acuminate, the base rounded, with 2 small irregular, auriculate glands near the petiole, the upper and lower surfaces minutely pustulate, sometimes sparsely glandular-pubescent, the petiole 1–3 cm long. Staminate flowers in a congested panicle or subumbelliform inflorescence; pedicel (2–)4–5 mm long, sparsely glandular-pubescent; hypanthium 4–5(–13) mm long, sparsely glandular-pubescent; calyx shallowly cupular, glandular-pubescent, the lobes ca. 2.5 mm long, lanceolate, acute; petals oblong-hastate, 5–7 mm long, green or cream-colored, the median adaxial ridge glandular, slightly raised, broadest at the base, gradually tapering to about the center; stamens 1.5–2 mm long, the anthers ca. 1 mm long, slightly longer than wide. Pistillate flowers 2–4 on a short, thick peduncle; styles with the lower part somewhat thickened, the upper part dilated and broadly obcordate, curved inward longitudinally; ovary 6–9 mm long and 4–5 mm wide, glabrous. Fruit ovoid to oblong, 8–15 cm long, 5–11 cm wide, subtrigonus, smooth or irregularly verrucose, fleshy with thickened outer

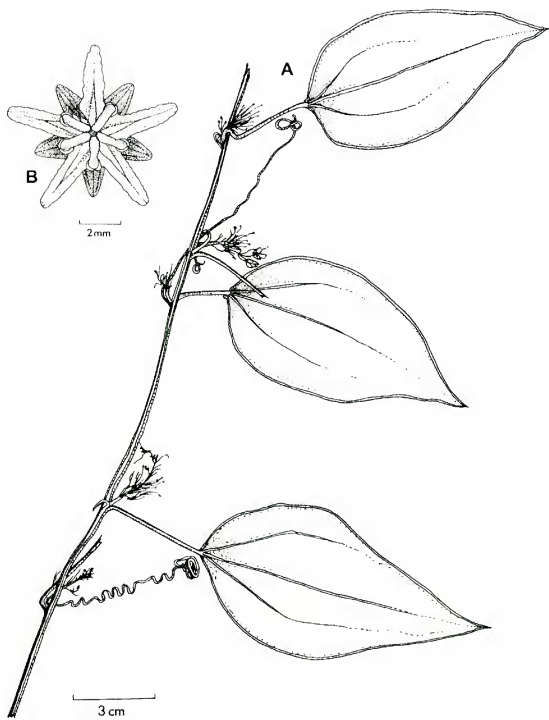


FIG. 6. *Fevillea passiflora*. A. Habit, staminate inflorescence (Hatschbach 19205). B. Staminate flower (Hatschbach 9106).

cortex, the apex short-apiculate; seeds suborbicular, compressed, 3.5–3.5 cm long, 3–4 cm wide, ca. 1.5 cm thick, pale brown, with a thin rose-margined cover.

Distribution and ecology.—Coastal Brazil in southeastern Bahia, Rio de Janeiro, eastern São Paulo, and eastern Paraná. In gallery forests near sea level.

Additional specimens examined. **BRAZIL. Bahia:** ca. 5 km W of Itamaraju, 20 Sep 1878, *Mori et al.* 10742 (CEPEC). **Paraná:** Guaratuba, Rio Cubatão, 27 Dec 1911, *Dusén* 13640 (F, NY); highway between Rio Branco do Sul and Cerro Azul along Rio P. Grossa, 26 Apr 1962, *Hatschbach* 9106 (US); Ribeirinha, 7 May 1968, *Hatschbach* 19205 (K); Morro do Inglês, 18 Feb 1976, *Hatschbach* 38090 (K). **São Paulo:** Campinas, 1873, *Corrêa de Mello* s.n. (BR); Cabital, 26 Dec 1941, *Pickel* 5566 (US); 1816–1821, *Saint-Hilaire* D600 (F). **Rio de Janeiro:** 1894, *Glaziou* 20335 (BR); Nov 1987, *Glaziou* 10870 (K); Cantagalo, 1859, *Peckolt* 8 (BR); Cantagalo, 1861, *Peckolt* s.n. (BR); Teresópolis, Serra dos Orgãos, 27 Feb 1887, *Schenck* 2898 (BR). **Without precise locality:** 1859, *Peckolt* s.n. (BR); s.d., *Martius* s.n. (BR).

EXCLUDED NAMES

Fevillea deltoidea Cogn., in *Martius*, Fl. Bras. 6(4):119. 1878. [= *Pteropepon deltoideus* (Cogn.) Cogn.].

Fevillea monosperma Vell., Fl. Flumin., Icon. 10:t. 103. 1831 ("1827"). [= *Pteropepon monospermus* (Vell.) Cogn.].

Fevillea pedata Smith ex Sims, Bot. Mag. t. 2681. 1826. [= *Telfairia pedata* (Smith ex Sims) Hooker].

Fevillea punctata (L.) Poir., in Lamarck, Encycl. 4:418. 1796. BASIONYM: *Bryonia punctata* L., Demonstr. Pl. 26. 1753. TYPE: Herb. Linn. No. 1180.1 (two sheets); apparently a mixed collection, possibly a *Trichosanthes* and a *Momordica*

Fevillea tamnifolia Kunth, in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 7:175. 1825. [= *Sicydium tamnifolium* (Kunth) Cogn.].

Fevillea trilobata Reichard, Syst. Pl. 4:253. 1780, nom. illegit.; non L., 1753. (BASIONYM: *Bryonia punctata* L., 1753.) [See *Fevillea punctata* above.]

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